

Serial No. 10/658,613

REMARKS

This amendment is responsive to the office action dated July 15, 2004.

Claims 1-27 were pending in the application. Claims 28-33 were rejected.

Claims 34-37 were objected to and Claims 1-27 were allowed by the Examiner.

By way of this amendment, the Applicant has amended claim 28.

Claims 1-27 and 29-37 remain unchanged.

Accordingly, Claims 1-37 are currently pending.

I. REJECTION OF CLAIMS UNDER 35 USC 102

Claims 28 and 31-33 were rejected under 35 USC 102(b), as being anticipated by US Patent No. 5,343,330 (Hoffman et al.). The Examiner stated that the invention in Hoffman discloses a lens assembly for directing light forwardly including a total internal reflection collector component and a projector component in fixed spaced relation to the collector component, wherein parallel rays of light entering the output end of the projector component fall entirely on the light source and accordingly anticipated the present invention.

The device in Hoffman is actually only a total internal reflection collector device and does not include a projector lens. Reference numerals 6 and 7 refer to the side surfaces of the lens device, not to two separate components. Specifically, numerals 6 and 7 are used to point out that the side walls of the reflector component have different angles relative to one another thereby allowing the device to handle different portions of the beam in different manners.

Further, components 6 and 7 are not two distinct elements in fixed spaced relation to one another. They are just two sections of the same monolithic lens having different cross sectional properties. There is no space between the two elements and they are not separate elements. If they were spaced, or if they were separate elements, the light rays necessarily would be refracted as they passed over the junction between the two spaced components as is necessarily the case when light rays pass from a

Serial No. 10/658,613

material having one index of refraction into a material having a different index of refraction.

Additionally, the present invention states that parallel light rays entering the output end are directed onto the light source. However, a review of the figures clearly shows that the light rays on the output end of the device are not parallel. In Fig. 2 reference numerals 13 and 17 clearly indicate rays on the output end that are skewed relative to one another. The passage in the specification relied upon by the Examiner to assert parallel light rays indicates that the light entering the device is substantially parallel and makes no reference to reverse traced light rays that enter the output end of the lens being parallel.

The device of the present invention in the claims as amended requires that parallel light rays entering the output end of the lens fall substantially entirely on the light source. The reason that the claim is worded in this manner is because it is common in the art that when evaluating lens efficiency, a reverse ray trace model is utilized. In reality, the present invention takes input from an LED light source that has an output angle of well over 130 degrees and collimates the light so that over 90% of the light source output is captured and directed forwardly in a parallel beam. Accordingly, the present invention actually operates in reverse as compared to the Hoffman device.

Also, the claim specifically requires two separate elements in spaced relation to one another, either as demonstrated in Fig. 6 where an air gap exists between the components or where an inactive transition region is placed between the components. In either case, the collector and projector must be in spaced relation.

Additionally, the claims of the present invention, as amended require that the output from the collector converge at a focal point that is then imaged by the projector component. As compared to Hoffman, the Hoffman device does not show this limitation. The Hoffman device does not demonstrate convergence of the light output until the output reaches a point in front of the entire assembly.

Serial No. 10/658,613

Finally, the claims require that the reverse ray trace model refract the light rays in the projector and refract and reflect the light rays in the collector. In the Hoffman device, the light rays passing through the portion referred to by the Examiner as the projector are both reflected and refracted by this portion of the assembly.

Accordingly, since the present invention recites subject matter and includes claim limitations that are not disclosed in Hoffman, the present invention cannot be anticipated by the cited reference and the rejection is not believed to be applicable. Reconsideration and withdrawal of the rejection is respectfully solicited.

II. REJECTION OF CLAIMS UNDER 35 USC 103

Claims 29 and 30 were rejected under 35 USC 103(a) as being unpatentable over Hoffman in view of US Patent No. 5,343,330 (Marshall et al.). The Examiner has stated that although Hoffman does not demonstrate that the lens be formed from a glass or an optical grade polymer, Marshall shows lenses formed from glass or thermoplastic resins and that the present invention is obvious in light of the combination of these references.

As stated above in the comments related to Hoffman alone, the device in Hoffman does not include a projector and collector in spaced relation, does not meet the claimed requirements for handling the reverse ray tracing analysis in the manner claimed and does not converge the light output in the collector at a point that falls before the projector. Accordingly, even if the Marshall disclosure were combined with Hoffman to form the Hoffman device from a glass or polymer, the present invention would still not be disclosed. Since the present invention includes limitations that are not disclosed in the cited reference either alone or in combination, the present rejection cannot be maintained.

Reconsideration of claims 29 and 30 is respectfully solicited in light of the comments above related to both Hoffman and Marshall.

Serial No. 10/658,613

III. ALLOWABLE SUBJECT MATTER

The Examiner indicated that Claims 1-27 were allowed.

IV. CLAIM OBJECTIONS

The Examiner indicated that Claims 34-37 were allowable but objected to as being dependent on rejected base claims. The Applicant asserts that the rejections of the base claims have been traversed and accordingly these claims are dependent on now allowable base claims. Accordingly withdrawal of this objection is respectfully requested.

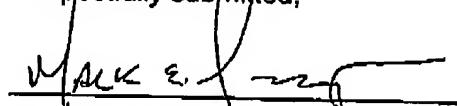
V. CONCLUSION

Accordingly, claims 1-37 are believed to be in condition for allowance and the application ready for issue.

Corresponding action is respectfully solicited.

PTO is authorized to charge any additional fees incurred as a result of the filing hereof or credit any overpayment to our account #02-0900.

Respectfully submitted,



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